



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22303-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,291	03/16/2004	Angus J. Tocher	5134-2	3637

22442 7590 08/12/2004

SHERIDAN ROSS PC
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT	PAPER NUMBER
----------	--------------

3745

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,291

Applicant(s)

TOCHER, ANGUS J.

Examiner

Christopher Verdier

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03162004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Drawings

The drawings are objected to under 37 C.F.R. 1.84(i) because figures 1 and 7 contain multiple views in the same figure, which must be labeled as separate figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because it contains the phrases "of the invention" and "The invention" (lines 12, 17, 18, 19, and 21) which are implied and should be deleted, and because line 18 contains the legal term "means" which should be deleted. Correction is required. See MPEP § 608.01(b).

Art Unit: 3745

The disclosure is objected to because of the following informalities: Appropriate correction is required.

On page 7, line 13, "a said power converter" is superfluous and should be deleted.

On page 7, line 18, "said" (first occurrence) should be changed to -- the --.

On page 13, line 23, "22" should be changed to -- 26 --.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1, lines 1-2 recites "one or more concentrator wings", while claim 1, last two lines recite "and concentric with the concentrator wings". In the case of a single concentrator wing, the last two lines are indefinite because there would only be a single concentrator wing and not plural concentrator wings as is claimed. Claim 8, line 2 recites "one or more concentrator wings", while claim 8, last two lines recite "and concentric with the concentrator wings". In the case of a single concentrator wing, the last two lines are indefinite because there would only be a single concentrator wing and not plural concentrator wings as is claimed. The scope of claims 11 and 13-14 is indefinite, in that claims 11 and 13-14, line 2 recite "supporting at least (emphasis added) elements of said concentrator wings and said turbine shroud". This would include supporting other elements not disclosed, thus the scope is unascertainable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 8, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by de Geus 4,204,799. Note the wind energy extraction apparatus comprising a concentrator wing 15 that reacts with the flow of wind to induce a drop in static air pressure that is then used to drive an impeller 12 and power converter 21; and a flow regulator means 22 having aerodynamic surfaces that direct the flow of wind entering a turbine shroud 13 and impinging upon the flow regulator means outwards from a central axis running approximately parallel with the direction of the wind entering the turbine shroud and concentric with the concentrator wings. Inherently disclosed is a method for extracting energy from wind, comprising the steps of causing wind to flow over the concentrator wing and thereby inducing a drop in static air pressure, using the drop in static pressure to draw a flow of wind into the turbine shroud; using the flow of wind to drive the impeller; and directing the flow of wind exiting the turbine shroud and impinging onto the aerodynamic surfaces of the flow regulator means outwards from the central axis running approximately parallel with the direction of the flow of wind and concentric with the concentrator wing.

Art Unit: 3745

Claims 1 and 8, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by Finney 5,464,320 (figure 3). Note the wind energy extraction apparatus comprising a concentrator wing 201 that reacts with the flow of wind to induce a drop in static air pressure that is then used to drive an impeller 108 and power converter 109; and a flow regulator means 901 having aerodynamic surfaces that direct the flow of wind entering a turbine shroud 101 and impinging upon the flow regulator means outwards from a central axis running approximately parallel with the direction of the wind entering the turbine shroud and concentric with the concentrator wings. Inherently disclosed is a method for extracting energy from wind, comprising the steps of causing wind to flow over the concentrator wing and thereby inducing a drop in static air pressure, using the drop in static pressure to draw a flow of wind into the turbine shroud; using the flow of wind to drive the impeller; and directing the flow of wind exiting the turbine shroud and impinging onto the aerodynamic surfaces of the flow regulator means outwards from the central axis running approximately parallel with the direction of the flow of wind and concentric with the concentrator wing.

Claims 1 and 8, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by Uzzell, Jr. 3,883,750. Note the wind energy extraction apparatus comprising a concentrator wing near 14 that reacts with the flow of wind to induce a drop in static air pressure that is then used to drive an impeller 46 and power converter 42; and a flow regulator means near 16 having aerodynamic surfaces that direct the flow of wind entering a turbine shroud 12 and impinging upon the flow regulator means outwards from a central axis running approximately parallel with the direction of the wind entering the turbine shroud and concentric with the

Art Unit: 3745

concentrator wings. Also disclosed is a method for extracting energy from wind, comprising the steps of causing wind to flow over the concentrator wing and thereby inducing a drop in static air pressure, using the drop in static pressure to draw a flow of wind into the turbine shroud; using the flow of wind to drive the impeller; and directing the flow of wind exiting the turbine shroud and impinging onto the aerodynamic surfaces of the flow regulator means outwards from the central axis running approximately parallel with the direction of the flow of wind and concentric with the concentrator wing.

Claims 1, 5, 8, and 12, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by Cohen 4,079,264 (figure 5). Note the wind energy extraction apparatus comprising a concentrator wing 2 that reacts with the flow of wind to induce a drop in static air pressure that is then used to drive an unnumbered impeller and an unnumbered power converter (analogous to 9 in figure 1); and an unnumbered flow regulator means (analogous to element 14 in figure 4) having aerodynamic surfaces that direct the flow of wind entering a turbine shroud 17 and impinging upon the flow regulator means outwards from a central axis running approximately parallel with the direction of the wind entering the turbine shroud and concentric with the concentrator wings. The power converter is installed on the downwind side of the aerodynamic surfaces of the flow regulator means; and an unnumbered impeller driveshaft connects the impeller to the power converter, with impeller driveshaft extending out of the flow regulator means and positioning the impeller within the flow of wind passing through the turbine shroud. Inherently disclosed is a method for extracting energy from wind, comprising the steps of causing wind to flow over the concentrator wing and thereby inducing a drop in static air

Art Unit: 3745

pressure, using the drop in static pressure to draw a flow of wind into the turbine shroud; using the flow of wind to drive the impeller; and directing the flow of wind exiting the turbine shroud and impinging onto the aerodynamic surfaces of the flow regulator means outwards from the central axis running approximately parallel with the direction of the flow of wind and concentric with the concentrator wing.

Claims 1, 5, 8, and 12, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by Crompton 3,339,078. Note the wind energy extraction apparatus comprising a concentrator wing 54/55/60 that reacts with the flow of wind to induce a drop in static air pressure that is then used to drive an impeller 13 and a power converter 41; and a flow regulator means 35 having aerodynamic surfaces that direct the flow of wind entering a turbine shroud 24 and impinging upon the flow regulator means outwards from a central axis running approximately parallel with the direction of the wind entering the turbine shroud and concentric with the concentrator wings. The power converter is installed on the downwind side of the aerodynamic surfaces of the flow regulator means; and an impeller driveshaft 11 connects the impeller to the power converter, with impeller driveshaft extending out of the flow regulator means and positioning the impeller within the flow of wind passing through the turbine shroud. Inherently disclosed is a method for extracting energy from wind, comprising the steps of causing wind to flow over the concentrator wing and thereby inducing a drop in static air pressure, using the drop in static pressure to draw a flow of wind into the turbine shroud; using the flow of wind to drive the impeller; and directing the flow of wind exiting the turbine shroud and impinging onto the aerodynamic surfaces of the flow regulator means outwards from the

Art Unit: 3745

central axis running approximately parallel with the direction of the flow of wind and concentric with the concentrator wing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 13, as far as they are definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over Crompton in view of United Kingdom Patent 695,519. Crompton discloses a wind energy extraction apparatus and method substantially as claimed as set forth above, but does not disclose a downwind guidance means for supporting a plurality of elements, with the downwind guidance means presenting little obstruction to the higher speed wind flow upstream of the elements, with the downwind guidance means facilitating the orientation of the elements approximately into the oncoming wind and the downwind guidance means comprising a lee support means that supports the elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel means that allows the elements to rotate around a common axis and effect the orientation.

United Kingdom Patent 695,519 shows a wind turbine having a downwind guidance means 8/14 for supporting a plurality of elements 1, 12, with the downwind guidance means

Art Unit: 3745

presenting little obstruction to the higher speed wind flow upstream of the elements, with the downwind guidance means facilitating the orientation of the elements approximately into the oncoming wind and the downwind guidance means comprising a lee support means 8 that supports the elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel means 14, for the purpose of allowing the elements to rotate around a common axis and effect the orientation.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the wind energy extraction apparatus and method of Crompton with a downwind guidance means for supporting a plurality of elements, with the downwind guidance means presenting little obstruction to the higher speed wind flow upstream of the elements, with the downwind guidance means facilitating the orientation of the elements approximately into the oncoming wind and the downwind guidance means comprising a lee support means that supports the elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel means, as taught by United Kingdom Patent 695,519, for the purpose of allowing the elements to rotate around a common axis and effect the orientation.

Claims 7 and 14, as far as they are definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over either (Crompton or de Geus) in view of United Kingdom Patent 695,519. Crompton or de Geus disclose a wind energy extraction apparatus and method substantially as claimed as set forth above, but do not disclose a downwind guidance means for supporting a

Art Unit: 3745

plurality of elements, with the downwind guidance means presenting little obstruction to the higher speed wind flow upstream of the elements, with the downwind guidance means facilitating the orientation of the elements approximately into the oncoming wind and the downwind guidance means comprising a lee support means that supports the elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel means that allows the elements to rotate around a common axis and effect the orientation.

United Kingdom Patent 695,519 shows a wind turbine having a downwind guidance means 8/14 for supporting a plurality of elements 1, 12, with the downwind guidance means presenting little obstruction to the higher speed wind flow upstream of the elements, with the downwind guidance means facilitating the orientation of the elements approximately into the oncoming wind and the downwind guidance means comprising a lee support means 8 that supports the elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel means 14, for the purpose of allowing the elements to rotate around a common axis and effect the orientation.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the wind energy extraction apparatus and method of either Crompton or de Geus with a downwind guidance means for supporting a plurality of elements, with the downwind guidance means presenting little obstruction to the higher speed wind flow upstream of the elements, with the downwind guidance means facilitating the orientation of the elements approximately into the oncoming wind and the downwind guidance means comprising

Art Unit: 3745

a lee support means that supports the elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel means, as taught by United Kingdom Patent 695,519, for the purpose of allowing the elements to rotate around a common axis and effect the orientation.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Karlsson, Pedersen, and Valentin are cited to show various wind turbines with flow augmentor arrangements.

Allowable Subject Matter

Claims 2-4 and 9-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (703)-308-2638. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (703) 308-1044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
August 5, 2004



Christopher Verdier
Primary Examiner
Art Unit 3745